

REMARKS

On an initial note, Applicants wish to thank the examiner for indicating that claims 37 and 41 include allowable subject matter and would be allowed if rewritten in independent form including limitations of the base claim and any intervening claims. Claims 32-56 are pending. Claims 32-36, 38-40, and 42-56 are currently rejected. Claim 49 has been amended to correct a scriber's error. The Applicants submit that these minor amendments and corrections herein are made without prejudice as to patentability, including the doctrine of equivalents, and that no new matter has been added.

Claims 32-36, 38-40, and 42-56 are Not Anticipated and are Nonobvious.

The Examiner rejected claims 38, 39, 45, 46, 48-50, 52, and 55 under 35 U.S.C. § 102(b) as being anticipated by Cazden, U.S. Patent No. 6,276,200 (hereinafter "Cazden"); claims 42, 43, 45 and 54 under 35 U.S.C. §102(b) as being anticipated by Maxhimer, US Patent No. 4,445,238 (hereinafter "Maxhimer"); claims 40, 53, and 56 under 35 U.S.C. §103(a) as being unpatentable over Cazden; claim 44 under 35 U.S.C. §103(a) as being unpatentable over Maxhimer in view of Mogab et al., U.S. Patent No. 5,878,447 (hereinafter "Mogab"); claims 32-36, 47, and 51 under 35 U.S.C. §103(a) as being unpatentable over Cazden in view of Martin et al., U.S. Patent No. 5,664,867 (hereinafter "Martin"). The Applicants respectfully traverse the rejection.

Claimed Embodiments of Applicants' Invention

Embodiments of the present claimed invention relate to an apparatus and methods for controlling water level in a pool. According to a claimed embodiment of the present claimed invention, the apparatus includes a sensor assembly 21 and a receiving assembly. The sensor assembly 21 primarily includes a water level sensor 28 (probes 30), a processor 48, a wave filter timer 61, and a transmitter 50. The sensor assembly 21 also includes a tilt-type switch 46 which turns on or off/resets sensor 28 by tilting the housing 29 of the sensor 28. The wave filter timer 61 and tilt switch 46, individually, can be used to conserve battery/power source life. The receiving assembly primarily includes a receiver 22, an overflow timer 91, and a solenoid valve 23 and is positioned to control water flow into the pool 10.

In operation, according to an embodiment of the claimed invention, the sensor assembly 21 is tilted to be in an on position and, for example, is releasably wedged between upper and lower sides of throat 24 of pool 10 (FIG. 2), at least partially immersed in the pool's water. A processor 48 detects if the sensor 28 senses low water, and a wave filter timer 61 turns on for a selected interval when the processor detects low water. To help overcome the effects of waves, the processor 48 can delay sending the low water signal until the end of the selected interval. If a low water indication is detected continuously during the selected interval, at the end of the selected interval, the processor 48 will cause the transmitter 50 to send to a receiver 22 a momentary signal indicating low water signal to open the water supply valve 23 to allow water to flow into the pool. This can be accomplished according to a continuous monitoring-transmitting loop until the pool is full or slightly overfilled. To help prevent excessive overfilling of the pool 10, an overfill counter/timer 91 associated with the receiver 22 turns on/counts for a selected interval when the receiver 22 receives the low water signal. To help ensure the pool is adequately filled, the receiver 22 can reset the overfill counter 91 prior to reaching the selected/predetermined count each time that the receiver receives a low water signal. If the overfill counter 91 has not been reset by the time the selected/predetermined count is reached, the supply valve 23 will be closed upon reaching the selected/predetermined count.

The Cited Documents-- Cazden, Maxhimer, Mogab, and Martin

As shown in Cazden, FIG. 9, Cazden discloses a float-operated swimming pool level control system that utilizes the swimming pool water level to activate mechanical switches (66a, 66b) to maintain the swimming pool water level at a predetermined level. Cazden, col. 2, lines 32-56. Particularly, Cazden discloses a sensor device having an outer housing (10) including suction cups (14) for attaching the sensor device to the inner sidewall (123) of a swimming pool. Cazden, col. 3, lines 42-47, col. 5, lines 32-36, and abstract. As perhaps best shown in Cazden, FIGS. 6 and 9A, a water level sensor (32) is positioned to "float" within housing (10) such that water enters liquid passageway (22) to "float" the water level sensor (32) to cause contact levers (76a, 76b) of switches (66a, 66b) to engage reference probe shaft (28) extending into the sensor outer wall (62) when the water level is either too high or too low, respectively. Cazden, col. 4, lines 50-66. Electrical switch activation of either of the switches (66a, 66b) thereby results in

transmission of a radiofrequency signal (135) to either open or close valve assembly (105). Cazden, col. 5, lines 17-21. That is, switch (66a) is engaged when the water level is low resulting in transmitter circuit (72) transmitting a radio-frequency signal (135) to receiver (88) which activates solenoid (101) to open valve assembly (105) to begin filling the pool. Cazden, col. 5, lines 38-49, and FIGS. 9 and 9A. Once full, switch (66b) is engaged which results in transmitter circuit (72) transmitting *another* radio-frequency signal (135) to receiver (88) to activate solenoid (101), this time, to close valve assembly (105) to shut off the water. Cazden, col. 5, lines 50-65, and FIGS. 9 and 9A.

As shown in Cazden FIGS. 10-12, Cazden provides an alternative embodiment utilizing a magnet (153) in place of probe shaft (28), and a pair of magnetic reed switches (171) positioned in place of and essentially performing the same function as switches (66a, 66b). Cazden, col. 6, lines 66 to col. 7, line 5. In operation, water level controller (181) is first attached to the inner sidewall (123) of the swimming pool (125), allowing the sealed sensor circuit housing (161) (FIG. 10) to float within the outer housing (150) relative to the magnet (153). Cazden, col. 7, lines 16-23, and FIG. 12. As the water level changes, the magnetic field of the magnet (153) actuates either the high-water level or low-water level magnetic reed switches (171). Cazden, col. 7, lines 29-35. An aperture [constricted air vent] (155) is provided in the outer housing (150) to dampen or slow movement of the sensor circuit housing (161). Cazden, col. 6, lines 56-59, and col. 7, lines 23-28. That is, although its function is not described, one skilled in the art would recognize that the dampening action comes mechanically by restricting the airflow movement in and out of the outer housing (150), slowing movement of the sensor circuit housing (161) within the outer housing (150).

Maxhimer also discloses a float-operated swimming pool water level control apparatus, but which uses a "wired" rather than "wireless" solution to its problem. Particularly, Maxhimer discloses a water level detection means (control apparatus (20) and cylinder (32)), disposed remotely from the swimming pool (4). Maxhimer, col. 3, lines 40-41. The cylinder (32) includes a means, e.g., float (38), to sever an optical pathway between an LED (30) and a corresponding photodetector (34) in order to detect when the water level is less than the preferred water level. Maxhimer, col. 3, lines 36-39, and col. 4, lines 63-68. The cylinder (32) is provided water through a tube (18) extending from gutter (6) and extending through the outer

wall surrounding gutter (6) and the surrounding soil (2). Maxhimer, col. 3, lines 42-53, and FIG. 2.

Mogab discloses a water regulator apparatus (10) including a transmitting assembly (14) housed in a housing (16) directly attached underneath a skimmer cover (12). Mogab, col. 4, line 66 to col. 5, line 2 and FIG. 1. An upper level sensor (38) and a lower level sensor (40) extend downwardly from the housing (16). Mogab, FIG. 1. In operation, when the water level in the pool (2) drops below the low level sensor (40), transmitting microcontroller (24) commands transmitter (26) to send a radio transmission to be received by receiver (44) which sends a signal to receiving microcontroller (46) which causes a water fill valve means (48) to supply water to the pool (2). Mogab, col. 6, lines 27-37. Once the water level has reached the upper level sensor (38), the transmission from transmitter (26) is terminated. Mogab, col. 6, lines 39-41. In response to termination of the transmission from transmitter (26), receiver (44) in turn stops sending its own signal to the receiving microcontroller (46). Mogab, col. 6, lines 39-43. In response to termination of receipt of the signal from receiver (44), microcontroller (46) deactivates the water fill valve (48). Mogab, col. 6, lines 39-44.

Martin discloses a nightlight (1) for a toilet seat (3) which includes a mercury switch which turns on/off a toilet seat light (6) upon raising/lowering the toilet seat (3). Martin, FIG. 1.

Claims 38, 39, 45, 46, 48-50, 52, and 55 are not Anticipated by Cazden

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference, whereby the identical invention must be shown in as complete detail as is contained in the claim. MPEP § 2131. Applicants respectfully submit that Cazden does not set forth each and every element featured in claims 38, 39, 45, 46, 48-50, 52, and 55.

For example, as a minimum, Cazden does not disclose, teach, or suggest, or set forth a wave filter timer (e.g., timer 61, App. FIG. 6) interfaced with a processor (e.g., microprocessor 48, App. FIG. 6), as featured in independent claim 38, or a processor delaying transmission of a momentary signal for a preselected time period as featured in independent claims 45 and 55, or delaying for a preselected interval, as featured in dependent claim 49. As noted above, the dampening action (identified by the Examiner as being disclosed in Cazden, col. 7, lines 26-28),

is apparently provided mechanically via air-vent aperture (155) in outer housing (150) by restricting the airflow movement in and out of the outer housing (150), slowing vertical movement of the sensor circuit housing (161) within the outer housing (150). Independent claims 38, 45, and 55, and dependent claim 49 require no such mechanical feature. Nor would such mechanical feature even be applicable to these embodiments of Applicants' claimed invention because Applicants' claimed embodiments do not utilize a flotation device. Thus, independent claims 38, 45, and 55, along with their respective dependent claims, including dependent claim 49, are not anticipated by Cazden.

Nor does Cazden disclose, teach, or suggest, or set forth a disclosure with respect to a circuit structure configured such that a power input of the transmitter is connected to an output of the processor so that the transmitter is supplied with power *only* when the processor directs the transmitter to send the *low* water signal, as featured in dependent claims 39, 50, and 52. First, it is clear that this could not be the case as Cazden clearly states that activation of the high-water switch results in generation of a radio frequency signal (135). Cazden, col. 5, lines 53-59. Further, there is no suggestion that Cazden even includes or utilizes a processor. Cazden does not provide a disclosure of its actual circuitry of sensor (32, 163) other than the existence of battery (38), conductors (44), transmitter circuit (72), conductors (68a, 68b), and switches (66a, 66b, 171), etc., which apparently only function to provide an input signal to the transmitter indicating either low-water or high-water. Even if the Examiner were to consider the existence of a processor to be inherent, which it is not, Cazden certainly does not set forth the claimed circuit construction ("power input of the transmitter is connected to an output of the processor so that...") in as complete detail as contained in the claims, as required by MPEP § 2131. Thus, dependent claims 39, 50, and 52 are not anticipated by Cazden for reasons independent of that of their respective independent claims.

Nor does Cazden disclose, teach, or suggest, or set forth a disclosure with respect to a tilt switch such as, for example, Applicants' tilt switch 46, as featured in claim 46. Although the Examiner indicates that upper switch (171) would be considered a tilt switch, Applicants respectfully submit that this cannot be true. Switch (171) is clearly disclosed as being a magnetically actuated reed switch. Cazden, col. 7, lines 1-2. The claimed tilt switch, as known to those skilled in the art, does not use magnetic principles to function, but rather, gravitational

principles. Thus, dependent claim 46 is not anticipated by Cazden for reasons independent of that of their respective independent claims.

Nor does Cazden disclose, teach, or suggest, or set forth a disclosure with respect to providing a digitally encoded low water signal as featured in dependent claim 48 and as additionally featured in dependent claim 49 and independent claim 55. Rather, it is Applicants' opinion that one skilled in the art would understand Cazden to be teaching use of an analog signal transmission. Nothing is mentioned of any form of digital encoding. Thus, dependent claims 48 and 49 are not anticipated by Cazden for reasons independent of that of their respective independent claims; and independent claim 55 is not anticipated for additional reasons beyond that previously described above.

Nor does Cazden disclose, teach, or suggest, or set forth a disclosure with respect to supplying power to a transmitter from an output of a processor only during each duty cycle of the processor as additionally featured in dependent claim 52. As noted above, there is no suggestion that Cazden even utilizes a processor. Thus, dependent claim 52 is not anticipated by Cazden for reasons independent of that of its respective independent claim.

Claims 40, 53, and 56 are not Obvious in view of Cazden

As a minimum, Cazden does not disclose, teach, or suggest either the required circuit configuration or method steps for informing a processor if low battery voltage is detected, or delaying a transmitter from sending the low battery voltage indication until the processor detects low water, and/or encoding the low battery voltage indication into the digitally encoded low water signal being sent by the transmitter, at least in part featured in claims 40, 53, and 56. Applicants respectfully submit that the disclosure of the inclusion of a physical structure providing a user the capability to replace a battery, as referenced by the Examiner, Cazden, col. 4, lines 1-4, cannot in any way disclose, teach, suggest or otherwise render obvious to one of ordinary skill in the art, either the circuit configuration or the low-battery detection step and/or post-low battery detection processing step(s), as featured in claims 40, 43, and 46. Accordingly, neither of these claims are rendered obvious in view of Cazden.

Claims 32-36, 47, and 51 are not Obvious over Cazden in view of Martin

The Examiner rejected claims 32-36, 47, and 51 under 35 U.S.C. §103(a) as being unpatentable over Cazden in view of Martin.

Cazden was described in detail, above. As also described above, Martin discloses a nightlight (1) for a toilet seat (3) which includes a mercury switch which turns on/off a toilet seat light (6) upon raising/lowering the toilet seat (3). The inherent problem solved by Martin appears to be the desire to provide males the ability to prevent bathroom incidents due to low illumination at nighttime. Martin has nothing to do with controlling a liquid level, i.e., the water level of the toilet, etc.

To establish a *prima facie* case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. See MPEP 2143. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. See MPEP 706.02(J). "The mere fact that references can be combined or modified does not render the resultant combination obvious *unless* the prior art also suggests the desirability of the combination." See MPEP 2143.01III (citing *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990)).

No Suggestion or Motivation to Combine or Modify References

The Applicant respectfully submits that neither of the cited references suggest any explicit or implicit motivation or desire to combine the references to accomplish Applicants' present invention. Further, Applicants respectfully submit that Martin is not analogous art because it is not reasonably pertinent to the particular problems with which either Applicants or Cazden were concerned.

There are three possible sources for a motivation to combine references: "the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art." See MPEP § 2143.01. As described previously, Cazden was concerned with having a *float-operated* swimming pool control system which can cause a pool water valve assembly (105) to turn on if the water level is below a predetermined threshold, and which can

cause a pool water level valve assembly (105) to subsequently shut off when the water level reaches a predetermined water level height. Cazden, col. 5, lines 30-65, and FIGS. 9 and 9A. Applicants' problem included the desire to improve upon various float-operated swimming pool apparatus. *See* Application, page 1, line 23 to page 2, line 2 (identifying problems associated with float-operated apparatus). Martin was concerned with providing males the ability to prevent bathroom incidents due to low illumination at nighttime. Martin, col. 1, lines 10-15. Clearly, there would be no motivation to one skilled in the art to combine such disparate references to try to solve the Applicants' problem, even using Applicants' disclosure as a roadmap. Correspondingly, one skilled in the art would not be motivated to combine Cazden with Martin, nor have the desire to do so. Thus, Applicants respectfully submit that this element is lacking.

No Reasonable Expectation of Success

Applicants respectfully submit that the second element of a *prima facie* case for obviousness is also lacking because there must be, and there is not in this present case, a reasonable expectation of success. Applicants respectfully submit that modifying Cazden to include a tilt switch which controls lighting of a light bulb would not result in Applicants' claimed invention. As silly as this may sound, Martin, nevertheless, as a whole, only teaches use of a mercury switch to light a toilet bowl (liquid container) nightlight, and does not teach using a mercury switch to interrupt power to a *processor*, much less one associated with a swimming pool water level control device. As shown in Martin FIGS. 1-9A, Martin does not utilize a processor and therefore, cannot teach interrupting power to such non-disclosed processor. Further, as noted above, Cazden too, does not disclose utilization of a processor. Further, even if Cazden could be modified by the teachings of, there must be, yet there is not, some indication of a desirability to do so. Thus, Applicants respectfully submit that this element is lacking.

Neither Cazden nor Martin, Alone or in Combination, Teach or Suggest All Claim Limitations

Applicants respectfully submit that the third element of a *prima facie* case for obviousness, which requires all claim limitations be taught or suggested, is also lacking. For example, with respect to independent claim 32, neither Cazden nor Martin, alone, or in combination, disclose, teach, or suggest: (i) a tilt switch connected between an electrical power

source and a processor; (ii) for supplying power to the processor while in an "on" position; (iii) the tilt switch being enclosed within a housing; or (iv) movable between the on and off position by *tilting* the housing," as featured in the claim.

The Examiner acknowledged in para. 5 of the Office Action that Cazden does not disclose a tilt switch, as claimed. The Examiner, however, cited Martin as disclosing "a tilt switch for turning on/off an electric device upon tilting the device via a toilet seat." The Martin tilt switch, however, is in fact an apparatus for turning on/off an electric night light bulb. Martin is not designed for controlling the water level in a swimming pool, but for detecting movement of a toilet seat and providing a lighting of a liquid container (toilet bowl). Thus, Martin cannot and does not teach or suggest a tilt switch connected *between* a power source and a *processor* for supplying power to the processor, as featured in claim 32. Further, even if one were to somehow equate the Martin tilt switch with the equivalent of Applicants' tilt switch 46, as described in the Application, it is not described as being enclosed in a housing *with* a processor, as featured in the claim. Thus, Martin does not teach or suggest a tilt switch...for supplying power to the processor while in an on position...and movable between the on and off position by tilting the housing, as featured in claim 32. Cazden in view of Martin simply does not teach the same structural configuration as that featured in the claim.

As each and every element as set forth in claim 32 have been shown to not be disclosed or suggested by either Cazden or Martin, alone or in combination, Applicants respectfully submit that the Examiner has not meet the requirements necessary to support a *prima facie* case for rejection under 35 USC § 103(a). Claim 32 has therefore, been shown to be allowable.

The dependent claims, including claims 33-36 (and claims 47 and 51), are also correspondingly shown to be allowable. Further, claims 33-36 and claims 47 and 51 are also independently patentable.

For example, regarding claim 33, neither Cazden nor Martin, alone or in combination, disclose, teach, or suggest a tilt switch that is in an off position when the housing is inverted from an operational position. Even if the Martin tilt switch were inside a housing with a processor, which it is not, the tilted position is not an inversion from an operational position. Thus, it does not have the same structure or perform the same function as Applicants' claimed tilt switch.

Regarding claim 34, neither Cazden nor Martin, alone or in combination, disclose, teach, or suggest that the Cazden water level sensor (32) has a wave filter *timer* that turns on for a selected interval when a processor (which does not exist in Cazden) detects a low water condition, or that it includes any electronic components, much less a processor, adapted to delay the transmitter (72) from sending a low water signal until the end of the selected interval, or adapted to cause the transmitter (72) to send the low water signal at the end of the selected interval only if the processor (which does not exist in Cazden) detects low water during substantially the entire featured selected interval. Such features, which are a direct contradiction of the teachings of Cazden, would not be inherent or be inherently obvious to one having ordinary skill in the art, especially in light of the fact that Cazden specifically states that "[e]lectrical switch activation results in transmission of a signal from the electrical contact switches 66a, 66b, through the electrical connectors 68 to the transmitter circuit 72 [after which a]...signal... is *then* transmitted...." Cazden, col. 5, lines 4-7 (emphasis added). Delaying transmission for a selected interval is a significant power saving feature not disclosed, taught, or suggested, except in the Applicants' disclosure and claims.

Regarding claim 35, neither Cazden nor Martin, alone or in combination, disclose, teach, or suggest an electrical configuration such that a power input of the transmitter is connected to an output of processor so that the transmitter is supplied with power momentarily during each duty cycle of processor when the processor directs the transmitter to send the low water signal. As shown in Cazden FIG. 5, the power input of the transmitter (72) appears to be from the battery (38) or at least not from the output of any processor. Thus, the transmitter (72) appears to have power continuously available.

Regarding claim 36, neither Cazden nor Martin, alone or in combination, disclose, teach, or suggest a processor, much less a processor adapted to delay the transmitter from sending a low battery voltage indication until the processor detects low water or to encode the low battery voltage indication into the low water signal when sent by the transmitter, or even the ability to detect a low battery. Cazden nor Martin simply do not disclose such features.

Regarding claims 47 and 52, the claims are independently patentable for the reasons provided, for example, with respect to claims 32 and 33.

Claims 42, 43, 45 and 54 are not Anticipated by Maxhimer

The Examiner rejected claims 42, 43, 45 and 54 as being anticipated by Maxhimer. As noted previously, Maxhimer discloses a *float*-operated swimming pool water level control apparatus which uses a "wired" rather than "wireless" solution to its problem. Particularly, Maxhimer discloses a water level detection means (control apparatus (20) and cylinder (32)), disposed remotely from the swimming pool (4), contrary to the teachings of Applicants. Maxhimer, col. 3, lines 40-41. The cylinder (32) includes a means, e.g., float (38), to sever an optical pathway between an LED (30) and a corresponding photodetector (34) in order to detect when the water level is less than the preferred water level. Maxhimer, col. 3, lines 36-39, and col. 4, lines 63-68. The cylinder (32) is provided water through a tube (18) extending from gutter (6) and through the outer wall surrounding gutter (6) and the surrounding soil (2). Maxhimer, col. 3, lines 42-53, and FIG. 2.

As noted above, a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference, whereby the identical invention must be shown in as complete detail as is contained in the claim. MPEP § 2131. Maxhimer does not set forth each and every element featured in claims 42, 43, 45 and 54.

For example, as a minimum, Maxhimer does not disclose, teach, or suggest, or set forth either a transmitter or a receiver as would be understood by one skilled in the art reading claims 42, 43, 45, and 54. Referring to Application, page 2, lines 18-22, a "transmitter" is a device that "sends a radio frequency signal" and a "receiver" is a device that "receives the signal from the transmitter." Maxhimer teaches no such structure. Nor does Maxhimer include a "processor" in its circuit configuration, as featured in independent claims 42 and 45. Maxhimer FIG. 1. These are important features in independent claims 42 and 45 and not set forth in Maxhimer.

Still further, regarding independent claim 42, Maxhimer does not disclose that timer (72) which the Examiner equates with an "overflow counter" in a "receiver" is capable of "reset[ing] *prior* to reaching the selected count each time that the receiver receives *subsequent* low water signals from the transmitter." It is only after reaching its maximum time period that the timer (72) will reset. Maxhimer, col. 5, lines 54-58. Also, referring to Maxhimer, col. 5, lines 48-68, a "subsequent" low water signal is not possible according to Maxhimer's disclosed configuration. That is, referring to Maxhimer, FIG. 1, Maxhimer's "low water signal" is continuous due to

removal of the float (38) from between LED (30) and photodetector (34) (which is not a problem in a "wired" solution, but a significant one in a "wireless" solution), thus negating the ability to provide a "subsequent" low water signal. Even if the signal were momentary, no subsequent low water signal would be possible as the pool would continue to fill after float 38 has again broke the connection. Maxhimer, col. 5, lines 54-58. Under normal operations, *only* after the timer (72) completed its duty cycle could the pool encounter a low water condition. Thus, provision of a "subsequent" low water signal would not be provided to cause a reset of the overflow counter *prior* to reaching the selected count. *Id.*

Still further, regarding independent claim 45, Maxhimer does not disclose, teach, or suggest, or set forth a process whereby *if* a processor, or any other circuit element, for that matter, detects low water in the pool for a *preselected time period*, the process includes causing a transmitter to send a momentary signal indicating low water level. Transmission is instead, substantially instantaneous, in response to the establishment of an optical connection between LED (30) and photodetector (34). Maxhimer, col. 4, lines 46-51.

Thus, independent claims 42 and 45, along with their respective dependent claims, including dependent claims 43 and 54, are not anticipated by Maxhimer.

Further, specifically regarding claim 43, Maxhimer does not disclose, teach, or suggest, or set forth a circuit configuration whereby a power input of a transmitter is connected to an output of a processor so the transmitter supplied with power only when the processor directs the transmitter to send a low water signal. *See* Maxhimer, FIG. 1. Maxhimer, simply does not need such energy conserving configuration as it apparently has continuous access to AC power through power supply (22), and therefore, does not provide such teaching. Regarding claim 54, this claim is not anticipated for the reasons provided with respect to claim 42, i.e., Maxhimer does not disclose resetting its timer (72) *prior* to reaching a selected count, etc.

Claim 44 is not Obvious over Maxhimer in view of Mogab

The Examiner rejected claims 44 under 35 U.S.C. §103(a) as being unpatentable over Maxhimer in view of Mogab. Maxhimer and Mogab were described, above.

To establish a *prima facie* case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of

ordinary skill in the art, to modify the reference or to combine reference teachings. *See* MPEP 2143. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *See* MPEP 706.02(J). "The mere fact that references can be combined or modified does not render the resultant combination obvious *unless* the prior art also suggests the desirability of the combination." *See* MPEP 2143.01III (citing *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990)).

The Applicants respectfully submit that neither of the cited references suggest any explicit or implicit motivation or desire to combine the references to accomplish Applicants' present invention. Maxhimer teaches an entirely "wired" solution to its problem--no transmitter/receiver circuits are necessary or disclosed. Nor would there be a likelihood of success that the combination would even properly function without extreme modification to the Maxhimer circuit design. That is, Applicants respectfully submit that one skilled in the art would not be motivated to replace the Maxhimer power supply (22) with a battery without a complete redesign of the circuit configuration. Power supply (22) must supply of 18 VDC, ± 15 VDC, and 25 VAC. Clearly, extensive modification would be necessary. Further, even if it were somehow shown that there was motivation to replace power supply (22) with a battery, nothing is disclosed, taught, or suggested in either of the references with respect to a structure including a means for encoding a low battery voltage indication into a low water signal being sent by a transmitter, as featured in the claim. Applicants have reviewed the references and have been unable to find any disclosure, thereof, explicitly or inherently. Correspondingly, claim 44 has been shown to be not obvious over Maxhimer in view of Mogab.

Summary

Accordingly, claims 38, 39, 45, 46, 48-50, 52, and 55 have been shown to be not anticipated by Cazden; claims 40, 53, and 56 have been shown to be patentable over Cazden; claims 32-36, 47, and 51 have been shown to be patentable over Cazden in view of Martin; claims 42, 43, 45 and 54 have been shown to be not anticipated by Maxhimer; and claim 44 has been shown to be patentable over Maxhimer in view of Mogab. Thus, each of the rejected claims 32-36, 38-40, and 42-56 have been shown to define over the cited documents.

In commenting upon the references and in order to facilitate a better understanding of the differences that are expressed in the claims, certain details of distinction between the cited documents and the claimed embodiments of the invention have been mentioned, even though such differences do not appear in all of the claims. It is not intended by mentioning any such unclaimed distinctions to create any implied limitations in the claims. Not all of the distinctions between the cited documents and Applicants' claimed embodiments of the invention have been made by Applicants. For the foregoing reasons, Applicants reserve the right to submit additional evidence showing the distinctions between Applicants claimed embodiments to be nonobvious in view of the cited references.

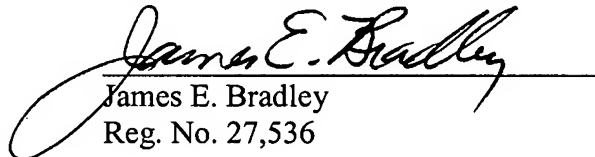
The foregoing remarks, made without prejudice as to patentability, including the doctrine of equivalents, are intended to assist the Examiner in re-examining the application and in the course of explanation may employ shortened or more specific or variant descriptions of some of the claim language. Such descriptions are not intended to limit the scope of the claims; the actual claim language should be considered in each case. Furthermore, the remarks are not to be considered to be exhaustive of the facets of the claimed embodiments of the invention that render it patentable, being only examples of certain advantageous features and differences that Applicants' attorney chooses to mention at this time.

CONCLUSION

In view of the amendments and remarks set forth herein, Applicants respectfully submit that the application is in condition for allowance. Accordingly, the issuance of a Notice of Allowability in due course is respectfully requested.

Respectfully submitted,

Date: *April 12, 2007*


James E. Bradley
Reg. No. 27,536

BRACEWELL & GIULIANI LLP
P.O. Box 61389
Houston, Texas 77208-1389
Telephone: (713) 221-3306
Facsimile (713) 222-3291
#2055625.1